

## Green library and its utilities in modern day library service: A study

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***Abstract :** Library is synonymous with ubiquity and utility. The role of library in this worldwide phenomenon is enormous. Libraries are platform for lifelong learning and provide users with information and knowledge they need. Green Library Movement which is comprising of librarians, libraries, cities, towns, college and university campuses committed to greening libraries and reducing eco-degradation. Environmental destruction sets off a downward spiral of ecological deterioration. Green Library stands for libraries, built with the intent to protect the environment and safeguard the community. Green Libraries expound the needs of a library, sustainable design and real cost savings in energy consumption. The paramount goal of green buildings is to develop and use sustainable energy-efficient resources in construction, maintenance and overall life of the structure. Green Libraries can serve the way libraries have always served as landmarks in their communities and in a way provide pleasant environment to the user community. Libraries must respond to this increasing focus on Green Movement and should simultaneously act as role models for sustainability by reeling off suitable and relevant information related to green issues and concerns.*

***Keywords:** Definition of Green Library, Standards for Green Libraries, Solutions for Greening Libraries, Role of Librarians, Green Library Movement in India.*

### **Introduction**

Of late, it is increasingly realised that the word GREEN murmurs in all fields. In the Oxford English Dictionary (1989) the term “green” is defined as “Pertaining to or supporting environmentalism”. The term “sustainable” relates to “forms of human economic activity and culture that do not lead to environmental degradation especially avoiding long-term depletion of natural resources”.

The phrase “green library” enters in library domain and seems to pervade the library and information science literature. Green or sustainable libraries are the edifice that is designed, built, renovated, operated or reused in an ecological and resource efficient manner. It colloquially refers to a library building that is certified as an environmentally friendly building. This trend implies that a green building is a requisite qualification for a library to be considered a “green library”. Green Library

contributes towards maintaining the natural ecological balance in the environment and preserving the planet and its natural systems and resources. It also improves day to day operations and procedures of the library as well as apprising the community about responsible environmental practices.

Libraries considering green design will often look at the Leadership in Energy and Environmental Design (LEED) rating system. Brown (2003) identifies the following green design elements which can be incorporated into libraries:

- Community Collaborations: Make sure that community assets are efficiently used and help to maintain public support.
- Daylight: Pair daylight with artificial lighting to reduce energy costs.
- Green materials: Use renewable materials like wood, linoleum, bamboo and cork.
- Green roofs
- Raised floor systems.
- Energy efficiency.
- Natural ventilation.
- Green power and renewable energy.
- Indoor environmental quality.

**Objective:**

The objectives of this paper are as followed:

- To discuss about how libraries can be transformed into Green Libraries.
- To depict standards for Green Libraries.
- To know about Green Library initiatives in the World and India.
- To understand about challenges for libraries to go Green.
- To appreciate the criticality of of ecological deficit to our very survival.

**Limitation of the Study:**

Green Library concept, in its entirety, is new in the field of Library & Information Science. This study is done by collecting and collating information from websites and some renowned journals. It is observed that sufficient information related to Green Library is not available. Therefore, in this study all information is not provided in every respect.

**Why and how are Libraries becoming green?**

The library sector should create models and systems that facilitate sustainable development. Libraries have considerable opportunities to improve their customers' environmental awareness through communication and environmental education.

There are many ways to go green. Few are as follows:

- **Proper way of using electric power:** Turning off lights during bright daylight, turning off fans, computers when not in use, use of CFL lights instead of tube lights with proper maintenance can minimize expenses.
- **Indoor Air Quality:** Lack of ventilation at public places can cause many harmful effects such as bacterial infections etc. The air should be recycled and should not be stagnant. Least use of air conditioners will reduce emission of harmful gases responsible for holes in ozone layer and in a way curb global warming.

Brown has identified following green design elements which can be incorporated into libraries:

- a. Community collaboration.
  - b. Green materials.
  - c. Green roof.
  - d. Raised floor system.
  - e. Energy efficiency.
  - f. Natural ventilation.
  - g. Green power and renewable energy.
  - h. Indoor environmental quality.
- **Reducing Pollution:** Use public vehicles for transporting; avoid machines as much as possible. It is important that we reduce the carbon footprint of our buildings. The term carbon footprint is defined as “the total amount of greenhouse gases produced to directly and indirectly support human activities usually expressed in equivalent tons of carbon dioxide (CO<sub>2</sub>)”.
  - **Effective Way of Paper Usage:** Papers are prepared from woods. If single paper is saved the tree is saved. Papers should not be wasted. Two sides of the paper should be utilised. Papers should be reused or recycled effectively. More e-books and e-journals should be used in order to save papers. Digitization of rare books also can be done to save papers.
  - **Recycling non-biodegradable products:** Put a separate container next to your trash can or printer making it easier to recycle your bottles, can or papers. Plastics should be avoided.

Reusable pens can be used instead of ball point pens. Polythene covers should be avoided consciously. This is also kind of saving earth.

- Use of maximum Natural light and wind can save electricity.
- Eco friendly pesticides can be used at time of pest control.
- Eco friendly materials can be used for stacking purpose.
- Using network printers instead of personal printers.
- Installing a new server and running multiple servers on one server box.
- Re-fill toner cartridges instead of buying new.
- Putting computers in sleep mode when in not use.
- **Limited Budget:** Green Library does not require any high budget allocation. It is now possible for libraries to build green buildings on conventional budgets. Green Libraries make use of finite energy resources which is readily available and also fit into the library budgets. Here technology does not become a barrier.
- **Social Responsibility:** As Green Libraries play a paramount role towards the welfare of mankind, this could be used as a part of the marketing strategy of the library as a socially responsible body which can have a big impact on the library's image.

#### Standards for Green Libraries:

##### (a) Chicago Illinois Standards :

Chicago is one of the first cities to incorporate environmentally friendly practices into public buildings and developed its own standard. This standard is highly influenced by LEED Green Building Rating System. According to it, Green building and sustainable building both refer to the design and construction of buildings that have a minimal impact on the environment. Green building encompasses all phases of design, materials selection and construction including life-cycle analysis and energy efficiency.

##### (b) Brown Green Standard :

California Governor Jerry Brown discussed the emerging trend of green libraries and proclaimed that the libraries were on the cutting edge of Green design. New or renovated state buildings over 10,000 sq. feet will have to reach the U.S. Green Building Council's LEED Silver Certification or higher as well as incorporate clean energy generation.

##### (c) IGBC Indian Green Building Council Standard :

In 2001 Confederation of Indian Industry (CII) formed IGBC with a vision to enable a sustainable build environment for all. IGBC has licensed the LEED Green Building

Standard from the U.S Green Building Council and in Collaboration developed Gold rating system to promote Green Buildings in India.

**(d) Green Rating for Integrated Habitat Assessment ( GRIHA ) :**

TERI (The Energy and Resources Institute, New Delhi) is another organization that is in forefront of the Green building movement in India. It was TERI who predicted the need for development of an indigenous tool for rating of green building in India which led to the foundation of ‘GRIHA’.

**Major Green Library Initiatives in World:**

SL.NO	NAME OF THE LIBRARY	INITIATIVES
1.	ANYTHINK BRIGHTON, BRIGHTON	It is believed to be the first carbon positive library in the USA. In 2009 it was offsetting 176,620 pound of carbon dioxide. The building includes a 108 kw photo voltaic system which generates more than a third of the building’s power and will save the library £30,000 a year in energy costs. It also uses geothermal heating and cooling.
2.	BLAIR LIBRARY, USA	It is one of the first public libraries in the USA to register with the U.S Green Building Council (USGBC). The library opened in October 2004 and was completed in 2006. The 88,000 square foot facility features a cistern to catch rainwater for irrigation a membrane roof, cork flooring, recycled content furnishings, waterless urinals low VOC finishes and fabrics etc. It received LEED Silver NC certification.
3.	SPANISH PEAKS LIBRARY, WALSENBURG, UK	Geothermal system for heating and cooling, flooring made of recycled rubber. It is the recipient of Stephen H Richard award in 2010.
4.	THE NATIONAL LIBRARY, SINGAPORE	The Singapore National Library has been called the greenest building on the planet. Designed by Ken Yeang, it opened in July 2005. It is designed using light shelves that allow the light to filter into the library, without having any harsh effects. It is the first green library for kids.

5.	FAYETTEVILLE (AR) PUBLIC LIBRARY	Opened in 2004, it was the first building in Arkansas to register with the U.S Green Building Council and achieved the silver LEED designation in 2006. The library's green roof saves about £ 4,000 a year in energy savings. The building's reading spaces and circulation desks were situated to take advantage of the natural sunlight without overworking the building's air conditioners, reducing energy costs by 25% and the overall building's energy consumption by 30%. Sunlight streams through 75%of the building's public spaces.
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#### How to Create Awareness:

- Libraries should inspire people by preparing and displaying charts on conserving natural resources.
- Programmes, competitions can be organised for the users.
- Select collection materials on organic gardening and composting or green computing and energy conservation.
- Set library links to environmental sites.
- Forge outreach relationships with users interested in environmental concerns.

#### Role of Librarians:

Libraries have always been a key contributor to community learning efforts and it is appropriate that they take a leadership role in sustainability movement on campus (Miller, 2010).

Seario and Oja ( 2012) has suggested following ways for making sustainable library:

- Information must be distributed and established by bringing out best practices and introducing them to wider use and environmental guide and work methods that motivate people to participate.
- Indicators and monitoring methods should be developed for sustainable libraries.
- An individual employee must be supported in implementing sustainability through commitment. An environmental training, tips for best practices and instructions on how to measure success and encouragement are essential.

- Library can also encourage sustainability internally.
- Customer communication should receive more attention because libraries have considerable opportunities to improve their customer environmental awareness through communication and environmental education as well as acting as an example.
- The intrinsic role of library in sustainable development should be emphasized more. Library activities in itself ecological which deserves to be highlighted more. However, the role of the library in promoting social sustainability needs to be reinforced.

Agashe 2013 has assigned following roles to a librarian in making Green Libraries:

- The green librarian role is most extraordinary here called eco-librarian who has to handle the budgets to support the organizations.
- The resources should be provided on site help to the people to locate library materials and many documents and organizations that are oriented towards a helpful future.
- These are two most important things- Economy and Ecology for making healthy and prosperous sustainable libraries. Librarian has to keep in mind essentially.

### **Green Library Movement in India:**

India is fighting severe problems relating to pollution explosion, dwindling resources, illiteracy, poverty, unemployment, threats of terrorism among others. In this scenario, little emphasis is given on emerging issues like hygiene and environmental awareness. Very recently, Indian libraries started to have provisions for natural lights as much as possible, energy saving bulbs in the reading rooms and other places within library premises, provision of natural air, emphasis on cleanliness, hygienic toilets, adequate provision of waste bins at appropriate places, proper disposal policies for weeded library materials / equipments etc. TERI has been in the forefront of the Green Library movement in India. This organisation has created first USGBC rated Green Building in India namely CII-Godrej Green Business Centre in 2001. TERI thought of the need for development of an indigenous tool for rating of green buildings in India. This rating system - GRIHA - has been created by the government of India as the National rating system. In Kerala COSTFORD (Centre of Science and Technology for Rural Development) a non- profit organization established in 1985 focuses on development of housing and made significant gains in providing alternative philosophy and technologies in order to take major responsibility in improving Green Library Movement in India.

### Standards and Prospects in India

#### (a) Indian Green Building Council ( IGBC)

- IGBC, part of the Confederation of Indian Industry (CII) was formed in the year 2001 to promote and rate Green buildings in India.
- The council offers a wide array of services which include developing new green building rating programmes, certification services and green building training programmes. In a way, it has been instrumental in mobilizing the green building movement in India.

#### (b) Leadership in Energy and Environmental Design ( LEED-India)

- USGBC has also established a LEED hub in India to further accelerate the adoption of LEED in India.
- USGBC and IGBC continue their collaboration in advancing the uptake of green buildings in India. LEED India projects registered with IGBC till June 2014 would be certified by IGBC. LEED projects in India registered after June 2014 would be certified by the Green Building Certification Institute (GBCI).

### Green Library Initiatives in India:

SL.NO	NAME OF THE LIBRARY	INITIATIVES
1.	NIT, SILCHAR	The initiatives for Greening the library taken by NIT, Silchar is probably the first of its kind in the entire North East Region of India. The New Library Building under construction is designed according to LEED certification system of U.S which can be the role model for developing green libraries in Barak Valley.
2.	CHENNAI'S GREEN LIBRARY- ANNA CENTENARY LIBRARY	The vision of this library is to be an urban library internationally recognised known for excellence in learning, innovative research and community engagement that contributes to the economic vitality, environmental sustainability and quality of life in the Chennai region and beyond.



3.	DELHI UNIVERSITY LIBRARY	The Library Building is naturally cool and pleasant with broad opening for natural lights. To prevent excessive heat of the Delhi Summer desert coolers are being used which have pads with indigenous material ‘ Khus khus’ which prevents heat from coming inside.
4.	MADRAS UNIVERSITY LIBRARY	It is a symmetrical mixture of Indian and British architectural style. Wide corridor and large windows with sunshades outside enable to accelerate fresh air, preventing direct sunlight and allowing entry of adequate natural lights.
5.	PERNA KARPO LIBRARY, LADAKH IN INDIAN HIMALAYAS	Solar panels, surrounded by white lotus garden, innovative technologies.
6.	KARNATAKA UNIVERSITY LIBRARY	No books, book shelves, chairs or tables but benches are installed under the trees so that students can sit and read the books taken from the university library.

Besides these, Green initiatives and measures have been taken up by Madras University Library System, Calcutta University Library System, Mumbai University Library System. The University Library Buildings are being converted into modern buildings known as “Knowledge Resource Centre” which are on the concept of “Green Building” providing open space learning environment and provisions for natural lights, natural air and other sustainable facilities.

#### Going Green Challenges for Libraries:

Notwithstanding the green library movement and sustainable practices are realized across the world, still there are some challenges to be dealt with:

- Though cost of constructing green building has become affordable to other entities, libraries will face issues in meeting green goals as they are subject to stringent budget cuts especially when reengineering or reconstructing library structures one cannot forget the cost associated with it.
- Library buildings are most neglected part especially in colleges. At most places librarians are helpless as he has to work in an allotted space even when new buildings are being proposed

or are under constructions. Architects too do not bother for well constructed green library buildings.

- Green practices in sustainable manner require considerable degree of expertise or competency from general management to ordinary level of maintenance throughout library functions. It is likely to expect lack of awareness in green technology and among the employees who have been recruited with traditional knowledge and skills.
- Attitudinal barriers play significant role in slowing down the sustainable practices in libraries. There are possibilities to convince the administration who would otherwise object the idea executing green library practices due to their unawareness. A well laid plan for green library building will remove resistance to change.

### **Conclusion:**

“Going green” and environment friendly, sustainable information systems and services are crucial issues which call for immediate attention. Scientists opine that our planet is at stake due to severe pollution. The vicious effects of Global Warming have already been shockingly felt including escalation in greenhouse gases, glacier retreat, changes in the timings of seasonal events, changes in agricultural productivity and many more. A change-over is necessary from non-renewable and polluting energy systems to those that are renewable and non-polluting. The Nobel Prize winning Intergovernmental Panel on Climate Change concluded in their report that “global warming is unequivocal and that the human activity is very likely causing most of the rise in temperatures” (**Rosenthal & Revkin, 2007, para.1**). The time is apt for libraries to step up and help communities to become green and sustainable. Green buildings are not only saving money in terms of energy but also in terms of health and productivity. Solar energy should be used and utilised to the maximum. In fact, if energy options are right, environmental aspect will be taken care of. The solar option (photothermal, photovoltaic and photosynthetic) and solar hydrogen. Solar option is non-polluting and perpetual. Library is a long term institution. A green library design is less expensive because of reduced upfront costs energy, water conservation and increased efficiency. The role of the library is to serve its community. Communities need libraries and librarians to act as role models for sustainability by providing accurate information on manner of green topics from alternative building practices to renewable energy options. Restorative strategies to reduce ecological deficit, environment impact management and environment management plans should be kept available to the library users. The time is ripe for librarians to support and continue to grow the Green Library Movement.

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